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AUTHOR Marschak, Thomas; Thomason, Diana
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ABSTRACT

This report describes a study that sought to determine how a school district's performance changes if more freedom is given to school sites with regard to budgeting, curriculum, personnel matters, and parent communications, at the same time more of the district's administrative resources are made available for tasks of local expertise, rather than tasks of coordination. The study focuses on a comparison of two California school districts, including one traditional centralized district and one decentralized district. Data for the study were drawn from questionnaires completed by elementary school principals in each district, from unstructured interviews with five principals and key district office personnel from each district, and from an examination of various district office documents. The authors conclude that there is more local autonomy in the decentralized district, but that effective use of this freedom requires individual schools to devote greater effort to certain tasks of local expertise than schools in the centralized district devote. (Author/JG)

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COORDINATION VERSUS LOCAL EXPERTISE:

A NEW VIEW OF SCHOOL DISTRICT DECENTRALIZATION

Thomas Marschak* and Diana Thomason*

Prepared under Grant NIE-G-74-0030
from National Institute of Education

Social Action Research Center
2728 Durant Avenue
Berkeley, California 94704
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*University of California, Berkeley

The opinions expressed in this paper are the authors' and do not reflect the views of any agency.

ABSTRACT

Among moderate-sized school districts there has recently developed a strong movement toward "decentralization" or "school-site management". Moderate-sized districts seem likely to become the laboratories for future research into what decentralization means and what it might achieve. The present study seeks: (1) To lay the groundwork for such research by suggesting a precise new form of the question—"Is decentralizing an improvement?" (2) To illustrate this new form of the question for the case of two moderate-sized California school districts which are very similar, except that one has chosen a "decentralized" mode of organizing and the other has not.

The new question asks: "How does a district's performance change if more freedom is given to school sites with regard to budgeting, curricular, personnel, and parent-communication actions, and at the same time more of the district's total administrative resources (the total hours of effort at both school sites and district office) are made available for tasks of local expertise and less for tasks of coordination?" Study of the two California districts, using interviews, questionnaires, and documents, suggests that in the "decentralized" district there is indeed more local freedom in choosing actions, but that effective use of this freedom requires that a school devote substantially greater effort to certain tasks of local expertise than a school in the "centralized" district. The "centralized" district, on the other hand, devotes more effort to certain tasks of coordination among its schools.

Future research will have to examine what is lost and what is gained as a district moves from high coordination effort and low local freedom to low coordination effort, high local freedom, and high local-expertise effort.

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COORDINATION VERSUS LOCAL EXPERTISE: A NEW VIEW OF SCHOOL DISTRICT DECENTRALIZATION

I. INTRODUCTION

"Decentralizing" complex organizations has come to be accepted widely as a good thing to do. It has become almost a folk wisdom, a prescription of mythic quality. It can only help an organization--so the intuition seems to run--if each of its members becomes freer to exploit his skills, or follow his hunches, or use his special knowledge, and if the scope of the choices allowed him expands. He will then identify more closely with his task, contribute more of his own particular viewpoint, flair, background, and so the organization as a whole is bound to perform better, its human resources are bound to be allocated more efficiently. It is the function of theory to dissect this windy but seductive conjecture, to make it much more precise, and to show what properties of the real world would make it true. It is the function of empirical study to see whether or not the real world exhibits these properties. So far, both serious theory and serious empirical study are in a very primitive stage indeed.

But the conjecture does not wait for serious theory and empirical study. It marches steadily onward and influences concrete policy decisions, even where the organization in question is of the subtlest kind, even when many disagree as to what good "performance" of the organization means. School districts are such organizations, and the decentralization conjecture has been widely invoked in choosing how to run them.

Current interest in the question seems to have sprung from the urban dilemma which, in the 1960's, ripened at last into a viable arena for political action. The huge urban school systems seemed quite unable to meet the competing claims of racially and economically diverse clienteles. Teachers' unions, professional administrators, taxpayers, poor parents, middle-class parents, nonwhite parents--what each wanted from the system was not what the others wanted. As the conflict sharpened, federal sticks and carrots--desegregation and the programs of the War on Poverty--helped to force some attempt at resolution.

"Community control", hovering over the battleground, was summoned and enshrined by most of the combatants--though some resisted--as the one clear hope for peace. The idea seems to have been that community control could, to an important extent, give each faction of parents a geographical piece of the system--a subdistrict--to shape to its own ends. But at the same time those factions not geographically separable--the teachers' unions and the administrative bureaucracy--had to agree to the reform, and so for some decisions--personnel decisions, for example--the subdistricts could not be totally autonomous. Accounts of these events ([5], [7])--above all in New York, but also in Detroit, Los Angeles, Chicago, Boston--show forcefully that community control, or "decentralization", grew out of political struggle. It did not rest on the measured scholarly judgment of experts in alternative modes of organizing school districts, seeking the modes that perform best. Study commissions were not lacking, but they had little firm knowledge to

go on, and though they claimed educational effectiveness for decentralization, their function appears, in retrospect, that of rationalizing a foregone conclusion, and choosing among a few closely related decentralized schemes. The choice fell on schemes which preserved some central administrative structure, and some subordination of the subdistrict to the political unit (the District) which, after all, still had to receive and disburse the tax funds, and to be accountable for their use in the subdistricts.

The original urban decentralization reform—that of New York—took a number of years to settle into its present form, as various factions pushed the scope of subdistrict autonomy in one direction or another. In other large reformed systems the original scope of decentralization has lasted up to the present. The history is too complex for a useful quick summary. Stimulated, perhaps, by the large urban reforms, a movement toward decentralization in moderate-sized school districts has developed over the last five to ten years. A probable further stimulus has been the Elementary and Secondary Education Act, which since 1970 has required school districts receiving funds to keep individual school accounts. School-by-school accounting was recommended as well by various study commissions and specialists in educational administration ([3], [8]). Once such accounts exist, it is not such a big step to permit schools some choice in the allocation of individual budgets. In districts of moderate size, decentralizing does not mean creating subdistricts of several schools each--the districts are too small for that. Rather it means permitting new

choices--budgetary choices and others--to the individual school.

The decentralizing movement in these districts is not a search for political peace, as in the urban case, but rather a search for a better use of a district's administrative resources. There may come a time when the puzzle of large urban school systems is viewed in a similar apolitical way. For the present, it is probably the moderate-sized districts which have to be the laboratories for testing and comparing organizational styles.

In California, particularly, a growing number of district superintendents have proposed decentralizing with regard to budgeting, in the sense that a principal is allowed some freedom to allocate a school budget. The terms "school-site management" or "decentralized school-site budgeting" have usually been applied to these proposals. A monograph issued by the professional organization of the state's school administrators ([2]) describes the proposals, and calls them a "promising trend". A recent survey of California districts ([4]) found 85 who reported using school-site budgeting. A larger survey, with a higher response rate, would doubtless turn up many more. There is evidence from the same survey that a shift toward freedom to choose budget allocations is typically accompanied by some shift toward greater freedom of choice in curricular matters.

Population trends seem likely to make all districts face smaller resources and stronger pressures for good management for years to come. If making a district "more decentralized" is to be proposed more widely as a managerial improvement, then it deserves to rest on a solid base of knowledge. Research into what "more decentralized" really means and what

such a change might achieve for school districts has just begun. But data to feed such inquiry will pile up rapidly. The present study may help to guide the research which is to come.

II. A "TOY" ORGANIZATION AND A NEW CONCEPT TO REPLACE "DECENTRALIZING"

The present study looks at two medium-sized California school districts, to be described in detail in Section III below.* They are very similar except for the organizational style each has adopted. Our main purpose is to characterize and compare the two districts in a way that will be useful for future studies of the decentralization question, using interviews, questionnaires and documents to do so. One of the districts—which we shall call District D--is widely known as "decentralized" by outsiders and by administrators, principals, and teachers. The term is used specifically to describe budgeting, for principals are free to allocate a given sum among a number of budget categories. But, as we shall see, the "decentralizing" is perceived by members of the district to go beyond budgeting. It is understood to mean that in the district there is more school-site "freedom" and "responsibility" in matters of curriculum, personnel, and community relations than one would find in a great many other districts of similar size and composition. For members of the district a whole new style of school-site and district administration seems to be loosely associated with the term "decentralized", though details of the style are not agreed upon and probably very few members have thought carefully about them.

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*We are grateful to Norman Seward for first suggesting C and D as a pair of districts suitable for the study. The data in Table B below are largely taken from Seward's own study of C and D [14].

In the second district--which we shall call District C--the contrasting term "centralized" was not used as self-descriptive in the interviews conducted and documents examined. Perhaps this is because of the folk wisdom which makes decentralizing a good thing and, by implication, staying "centralized" or "traditional" a bad thing. The issue of what it might be like to live under a contrasting style of district administration did not come easily to the surface in interviews with principals and administrators in District C. But probing more deeply into principals' views as to the usefulness of certain district office constraints did, as seen in the accounts in Section IV C below, evoke from them some skepticism, and sometimes a clear wish that the constraints were not there.

The term "decentralizing" and, more important, the term "more decentralized than" are elusive and hard to define clearly and usefully, even for the enthusiasts of decentralizing. We shall begin with a formal clarification. We shall end up, in fact, abandoning the term "more decentralized than" and using a new concept instead: "more freedom accompanied by more effort devoted to local expertise and less to coordination". We shall argue that this is a more useful concept--easier to define unambiguously, easier to recognize, and capturing more of what really matters in styles of organizing--even in organizations as complex as school districts.

An imaginary, very simple "toy" organization will serve to clarify the ideas. Even though it is simple, it is abstract and so, a little patience may be required to absorb the discussion. But without some such abstraction there is no way to make our concepts

clear enough so that they are understood in the same way by everyone.

The toy organization has just three persons. Person A and B are called "local" persons and Person C is "the center". The 3-person organization faces an environment over which it has no control and which changes from one time period to the next. For convenience, suppose the time period is a week. The environment falls into three parts, each associated with one of the three persons. Person A's part--called simply Person A's local environment--is his specialty. He is its natural observer and others can only learn about it through him. Similarly for Person B and for the Center. In each week the organization is required to take an action. An action has two parts. The first part, called simply A's action--is the responsibility of A; the second part (B's action) is the responsibility of Person B. We shall sometimes call A's action and B's action local actions. The performance of the organization each week depends on the action taken that week and on that week's environment.

Given an environment and given any two actions, the organization knows which of the two is better--yields the higher performance--or whether both are equally good. The task of the organization is to observe the environment each week, to choose the week's action using these observations, and to put the chosen actions into effect. The organization wants to choose actions so that on the average, over many weeks' environments, performance is high. To do so, it wants to choose, at the start of its existence, a good design. Designs are the objects to which the terms "more decentralized" or "freer" or "more effort

devoted to local expertise" will be applied.

A design specifies what sort of observing, communicating, and computing will generate, in each week, the action the organization takes that week in response to that week's environment. Specifically, each of the three persons begins the week by making local observations on his part of the week's environment. Persons A and B then report on these observations to the Center. The Center uses these reports and his own observations to generate instructions which are sent to A and B. A and B use the instructions received and their own observations to choose the local actions they will take. A design specifies all these steps. In particular, a design determines:

(a) How detailed are each person's observations on his local environment. Low detail in observing means always dividing the possible local environments into the same very few types--just two types for example--and then deciding to which type the current week's environment belongs. More highly detailed observing means dividing the possible environments into more types.

(b) How detailed are the reports on the observations which A and B send to the Center. If, in his observing, Person A distinguished between ten different kinds of environment, the most detailed report he could make would tell the Center precisely which of the ten types he has observed. In a less detailed report, A might, for example, lump three of the ten types into one category, four into a second, and the remaining three into a third, and then report to the Center into which of the three categories his observations fall. In the least

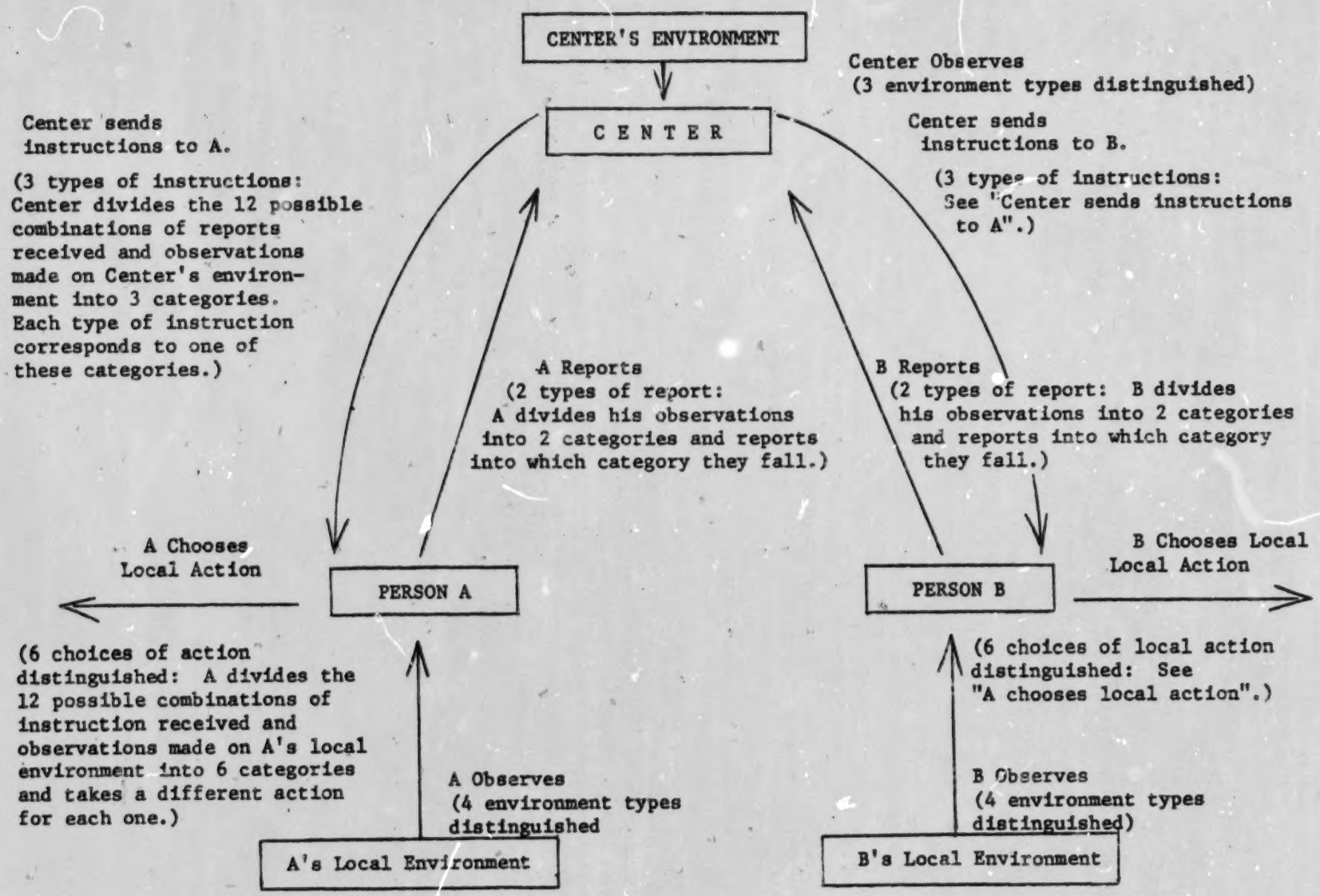
detailed report, there would be just two categories.

(c) How detailed are the instructions which the Center sends. These are based on the reports received and on the Center's observations. Again, in the least detailed instructions, the Center could divide the possible combinations of reports received and the Center's observations into just two categories and issue just two kinds of instruction, one for each category.

(d) How detailed is the action-choosing of A and B. Choice of local action is based on local observations made and on instructions received; and a high level of action-choosing detail means that the possible combinations of instruction and local observation are divided into many categories.

The picture which follows (Table A) is an example of the levels of detail which a design might require. Here A's and B's observing of their local environments are both four-fold, and the Center's observing of his environment is three-fold. This means that, for the Center, there are twelve possible combinations of reports received and the Center's observations on which the Center can base his instructions to A and B. The Center divides the twelve combinations into three categories and engages in three-fold instructing to both A and B (but the categories used for A might be different than for B). Then for both A and B there are twelve possible combinations of local observations made and instructions received on which to base the local action chosen. A divides the twelve combinations into six categories and takes a different local action for each; and so does B.

Table A


CENTER'S ENVIRONMENT
CENTER
Center Observes
(3 environment types distinguished)
Center sends
instructions to A.
(3 types of instructions:
Center divides the 12 possible
combinations of reports
received and observations
made on Center's environ-
ment into 3 categories.
Each type of instruction
corresponds to one of
these categories.)
Center sends
instructions to B.
(3 types of instructions:
See "Center sends instructions
to A".)
A Reports
(2 types of report:
A divides his observations
into 2 categories and reports
into which category they fall.)
B Reports
(2 types of report: B divides
his observations into 2 categories
and reports into which category
they fall.)
A Chooses
Local Action
PERSON A
PERSON B
B Chooses Local
Local Action
(6 choices of action
distinguished: A divides the
12 possible combinations of
instruction received and
observations made on A's local
environment into 6 categories
and takes a different action
for each one.)
(6 choices of local action
distinguished: See
"A chooses local action".)
A Observes
(4 environment types
distinguished
B Observes
(4 environment types
distinguished)
A's Local Environment
B's Local Environment

The picture specifies one set of levels of detail. But not every set of levels is possible. It would be senseless, for example, to ask A to choose among eight local actions if there are only four possible instruction-observation combinations on which he is to base his choice of action.* Specifically, then:

--The number of possible local actions to be chosen by each local person must not be more than the number of possible instruction-observation combinations for that person.

--The number of possible reports which a local person can send must not be more than the number of his possible observations (the number of types into which he divides his local environment).

--The number of possible instructions which the Center can send to a local person must not exceed the number of possible combinations of the Center's observations and reports received by the Center.

A set of detail levels is possible if it meets these constraints. The set of levels in the picture is a possible set. When a set of detail levels is spoken of henceforth it will be understood to be a possible set.

Specifying a (possible) set of detail levels is not yet enough to specify completely a design for the 3-person organization. Given the detail levels of the picture, for example, we still have

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*Unless A were to choose among the eight actions randomly. But randomizing action choices cannot achieve a higher average value of a performance indicator (defined, as below, as a function of the actions taken and of the environment).

to specify: (a) Which particular four local-environmental types A will use, which four B will use, and which three the Center will use, that is, how the given sets of A environments, B environments and Center environments are to be divided into four types, four types, and three types. (b) Which six actions A will use and which six B will use. (c) How A and B are to lump the three types of local environment into two categories (e.g., the first two types into one category, the third type into a category by itself) in sending their reports; how the Center is to divide the twelve possible report-observation combinations into three categories, in determining instructions to A, and again, in determining instructions to B; how A and B are each to divide the twelve possible instruction-observation combinations into six categories corresponding to the six actions each can take.

If we have specified all of this, for some (possible) set of detail levels, then we have completely described a design. It is of no importance how we label reports and instructions—reports could be called "red" or "green", for example, and instructions "X", "Y" or "Z".

Now two designs could be compared with respect to <u>freedom.</u> To do so, recall that a person's local action depends on the instruction he receives from the Center <u>and</u> on his local observation. So for any <u>particular</u> instruction a person receives from the Center, a design specifies a <u>set</u> of possible local actions among which that person can choose (a subset of all the actions among which he can choose). What local action he in fact chooses

out of this set depends on his current observation--that is, on the category into which his current local environment falls. So the natural meaning of the statement "Design 1 is freer than Design 2" is that the local-action set out of which every person chooses, given any particular instruction from the Center in Design 1, is not smaller than all such sets for all possible instructions in Design 2. For some particular instruction, moreover, the former set is actually larger than all of the latter sets. Here one set "not smaller" than another means that the first contains all the local actions of the second; "larger" means that it contains some extra local actions besides.

Then if Design 1 is freer than Design 2 it must, for at least one person, require more observing. Design 1 must require him to divide his local environment into more possible types, since for one or more instructions he must choose out of a larger set of actions, and this choice can only be based on more observation (more local-environment types).

For many pairs of designs it will not be possible to say that the first is freer or that the second is freer. They will simply not be comparable with respect to freedom: some person will have a given local-action set to choose among for some instruction in the first design, but for some instruction in the second design, his possible local-action set will include a few of the local actions in the former set, but not all of them, as well as some actions which are not in the former set at all.

The action which a particular design generates each week, in response to that week's environment, together with the environment itself, determine the organization's performance that week. Imagine performance to be summarized by some performance indicator. This is a number assigned to every possible environment--action pair. The higher the number, the higher the performance. If the design is a good one it will, averaging over all possible weekly environments, give at least as high an average value of the performance indicator as any other design which requires the same total decision-making effort.

But what might one reasonably mean, in studying such a toy organization, by the total effort which a design requires each week? The simplest approach is simply to say that effort depends only on the levels of detail just described, and increases if any of the levels increases. Then, in a design with the levels of detail in the picture, the nine numbers (4,4,3,2,2,3,3,6,6) determine the total effort required. Another design in which some of these numbers were replaced by higher ones, and none by a lower one, would require more effort. We could then simply ask: which of the many designs using the levels of detail (4,4,3,2,2,3,3,6,6), and no higher levels, achieves the highest average performance? If we have found it, and have found similarly "efficient" designs for other detail levels, then we have greatly narrowed down the designs which need to be considered for the 3-person organization.

But suppose we go further. Suppose we lump together local observing by A, local observing by B, action-choosing by A, and action-choosing by B into tasks of local expertise. We shall also lump together reporting by A, reporting by B, observing by the Center, and instructing by the Center into tasks of coordination. We are then interested in a given total effort, and in different ways of dividing the total effort among tasks of local expertise and tasks of coordination. Instead of speaking of one design as "more decentralized" than another, where "more decentralized" simply means freer, we want to be able to compare two designs which require the same total effort, and to be able to say that one devotes more of its effort to local expertise than the other, and less to coordination.

Before we could do so, we would have to face one towering difficulty--to measure in some reasonable way, both total effort and effort devoted to the two groups of tasks. Since the purpose here is only to clarify concepts, consider an extremely simpleminded measure: suppose the effort devoted to any of the tasks we have identified is given, for all of them, by applying the same function--call it f--which assigns a positive number to the level of detail associated with that task. Imagine the unit of effort to be an hour of an organization member's time, and that all member-hours are equally costly. If the level of detail of a weekly task required of some member is three, then it takes f(3) hours of his time to fulfill it--whether it is a task of reporting or observing or instructing or action-choosing.

For the toy three-member organization, any design with the levels of detail in the picture requires a total effort equal to $E = 2f(4) + 2f(2) + 3f(3) + 2f(6)$ person-hours, of which,

$$E_L = 2f(4) + 2f(6)$$

are devoted to local expertise, and,

$$E_C = 3f(3) + 2f(2)$$

to coordination.

Suppose that we decrease the effort the Center spends on instructions to both A and B, reducing the levels of detail for each from 3 to 2. The effort so saved is $[3f(3) + 2f(2)] - [2f(3) + 3f(2)]$, or $f(3) - f(2)$ hours. Suppose that this effort can be used, instead, to increase the level of detail in local observing by A and by B, from the original fourfold observing to five-fold observing, i.e., suppose that $f(3) - f(2) = 2[f(5) - f(4)]$. Then, when we replace a design with the old levels by a design with the new ones, we are devoting more of the same total effort to local expertise and less to coordination.

We can also speak of the <u>best design consistent with</u> the old allocation of effort and the best design consistent with the new one. There are a number of ways to choose the levels of detail for A's and B's observing and action-choosing, so that they require the old local-expertise effort, $E_L = 2f(4) + 2f(6)$, and a number of ways to choose the levels for A's and B's reporting, the Center's observing, and the Center's instructing, so that they require the old coordination effort, $E_C = 3f(3) + 2f(2)$. For each such choice of levels there are many possible designs. Of these, the design achieving the highest average performance is the <u>best</u> design consistent with the old allocation of effort.

Our new version of the "Decentralization Conjecture" can now be stated for the toy organization, and for a given way of finding the effort required to perform the tasks required by a design--either the simpleminded way just illustrated, or some other way. The Conjecture takes two forms. We may think of the first form--the robot form--as concerned with a "super-designer", who is able to find the best possible design consistent with given levels of detail, and who is sure that the members of the organization are programmable robots, who will always precisely follow that design. This form of the Conjecture runs as follows:

Decentralization Conjecture--Robot Form

Suppose a total number of person-hours available for operation of designs is given. Then for a wide class of performance indicators, the organization's average performance is improved when more of the total is devoted to local expertise and less to coordination--if for every division of total hours, the organization uses the best possible design consistent with that division--as long as the hours devoted to coordination do not drop below a critical level.

If human organization members were in fact programmable robots, then this form of the Conjecture would be the only one we need. If it holds for a particular organization, (a 3-member organization or a larger one), then it provides the super-designer with crucial guidance in his search for a design which efficiently uses the organization's decision-making resources.

The Robot Conjecture does not deal with freedom. Nor would it be useful if it did so, since robots neither "like" nor "dislike" freedom, and there is no reason why a design with more freedom should generate better local actions than one with less.

But the local persons in an organization, and the Center as well, are humans and not robots. An organizer can lay out a design for them, but he cannot be sure it will be followed . The reports actually sent may not be the reports required by the design, nor the instructions the Center sends, nor the observations made, nor the local actions taken. Further, the local persons may prefer some tasks to others; and they may perform "better" when they have greater freedom (they may, for example, voluntarily observe their local environments in great detail), because they find their roles more satisfying when freedom is greater.

Still, there are three things a designer can choose if he is faced with humans rather than robots, and with a fixed number of total hours available for the organization's tasks:

(1) The designer can choose the hours to be made available for tasks of local expertise and the hours to be made available for tasks of coordination.

(2) The designer can choose each local person's "freedom", that is to say, a minimal set of local actions, which are always included among the local actions that person can choose (using his local observations to do so), whatever instruction he has received from the Center. The designer, in other words, can prohibit the organization from following a design which interferes with the prescribed freedom, by sometimes (for some instruction) narrowing down the set of actions among which the local person can choose, so as to exclude some actions in the prescribed minimal set.

(3) The designer can choose a reward structure. This assigns to every environment-action pair* a list of rewards, one for each member of the organization.

Once the organization has been given the designer's choice of these three objects, then it is the organization's members themselves--the Center and the local persons--who will decide which one will be used of the many designs consistent with the first two objects--with the given "local-expertise budget" and "coordination budget", and with the given "freedom" for each local person. Their choice of design will be influenced by the rewards awaiting them, by the different distribution of the various decision-making burdens in the different possible designs, and by their tastes for some tasks, as opposed to others. Their choice of design will be the outcome of some process of collective consultation and of conflict resolution. If the designer has chosen his three elements well--if he has understood something of the complex interplay between rewards, freedom, and the effective performance of individual tasks, and something about the process which leads the members to choose among the designs he permits them--then the members will end up choosing a design which achieves a high value of a performance indicator, expressing the designer's goals. The designer's search for a good choice of his three elements is immensely simplified if a Behavioral Form of the Decentralization Conjecture were true. This we can now state:

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*Recall that "action" means the organization's action, which is composed of local actions. "Environment" means the organization's environment, composed of local environments.

Decentralization Conjecture--Behavioral Form

Suppose a total number of person-hours are available for operation of designs. Let the number of these hours to be devoted to tasks of local expertise be increased, and the number to be devoted to tasks of coordination decreased, while at the same time, the local-action set always choosable, regardless of instruction, is enlarged for at least one local person and contracted for none. Subject only to the changed local-expertise and coordination budgets, and to the enlarged local-action freedom, the organization's members choose the design they will use. Then for a wide class of performance indicators, and for a reasonable reward structure, the organization's average performance for its chosen design will improve, provided the hours devoted to coordination do not drop below a critical level.

The Robot Conjecture is more precise than the Behavioral one. To verify it would be useful indeed, for we would then know something about the "pure" benefits of greater local expertise--those which are not due to human preferences for more freedom, or to human willingness to follow certain designs but not others. Neither conjecture* specifies the critical level of coordination effort below which reductions are harmful. It only says that there is one. Nor does either conjecture say anything about the relevant class of performance indicators--only that there is a "wide" class for which it holds. The Behavioral Conjecture, moreover, is vague about reward structures: it speaks of "reasonable" ones. The class of relevant indicators, and of reasonable reward structures, must be found in the organization's particular setting.

*A remark should be made here about the relation of the two conjectures to the views taken of the decentralization question in various kinds of literature. Decentralization is widely discussed in writings of political

Certainly there are many ways the toy three-member organization could be made more complex, interesting, and real. We could let the Center take actions as well as A and B. We could introduce a new task, namely "remembering": a member would have to store his observations before reporting on them or (if he is the Center) before basing instructions on them; he then retrieves the stored information and uses it, together with

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scientists, students of "organizational behavior", and economists. The ideas just given are perhaps closest in spirit to the decentralization discussion in economics. But that discussion (see, for example, [1], [11]) has dealt for the most part with one kind of organization--an economy, or more generally, an organization whose task is to allocate easily quantifiable commodities, and whose performance is defined on the quantities of commodities with which each member of the organization ends up. One class of designs is chiefly considered for such organizations, namely designs in which some of the messages are prices and in which no one sends detailed reports about his local environment to anyone else. Such designs are called "decentralized" in the economic discussions. Some of the discussion rises to somewhat higher levels of generality, so that "commodities" and "prices" are not specifically mentioned ([9], [12], [13]). Very little of it, so far, deals with the effort required to operate a design; the notions of tasks of local expertise, tasks of coordination, and the effort each requires are new to the economic discussion. Little of the discussion, moreover, deals with the behavioral viability of the price-using designs--designs which certainly seem appealing for robot economies. A growing exception, however, is the recent literature on "incentive compatability" of such designs ([10]). This essentially asks: "What reward structures would make each member <u>want</u> to do his part in the operation of the design?"

received instructions or reports, to choose actions or (if he is the Center) instructions; remembering by A and B is a task of local expertise, remembering by the Center a task of coordination; levels of detail are associated in the usual way with each remembering task. Instead of letting successive weeks be totally independent of each other, as we have done, we may let successive environments be correlated, and could let performance in a given week depend not only on current action and environment, but on past actions as well. Finally, we could improve our illustrative and primitive picture of the technology of observing, reporting, instructing, and action-choosing, so that there is a different function relating level of detail to hours of effort for each of these tasks.

Nevertheless, our highly simplified toy organization has sufficed to clarify the conjecture to be studied. Why is it--in either form--a more useful conjecture than the very loosely worded conventional one, which says simply that giving members of the organization more "freedom to make decisions" is an improvement?

First, in the new version, both forms of the Conjecture are much more precise: they deal with well-defined objects, namely designs. To make the conventional conjecture (in either form) equally precise for the toy organization, we would have to let "more freedom to make

decisions" mean "freer" as we have defined it for designs. But if one suspects that it may improve matters to enlarge the set of local actions which may be chosen whatever the instruction, and if one probes more deeply into the grounds for this suspicion, it becomes clear that it is not just the larger local-action sets which yield the improvement. A larger set of actions is only an improvement if the choice made each week out of the larger set is a judicious choice--only if it is based on good (i.e., sufficiently detailed) local observation. If A chooses one out of eight possible local actions, in response to an instruction, then he must distinguish between eight or more types of local environment. If he distinguishes nine environment types, then he must lump two of them into one category (corresponding to one of the eight actions), but using nine types rather than eight somewhat enriches his eight-fold action choice--makes it a bit more "appropriate" to the current environment. Enlarging the set of choosable actions may not improve performance, if the effort devoted to local observing is not increased as well; and the more local-observing effort increases, the more improvement the larger number of actions is able to achieve. Yet the conventional "greater freedom" conjecture appears to say nothing at all about more local observing. It fails to suggest that greater effort has to accompany greater freedom, if greater freedom is to be useful.

Second, our version of the Conjecture emphasizes that effectively increasing local responsibilities requires more resources (effort) which must be taken away from other tasks confronting the organization, if its resources are fixed. Speaking simply of "more freedom" as the conventional

Conjecture does, totally obscures this crucial point.

Third, our version emphasizes that there is a balance to be struck. Coordination is important. Whether A's action choice is a good one for the organization depends to some extent on what B chooses and on B's and the Center's environments. Coordination, in effect, provides A with appropriate clues about B and about the Center. It must not be diminished too much, if good performance is to be obtained from a given total effort.

Fourth, our version emphasizes that the improvement due to a shift towards local expertise depends on the performance indicator. If the indicator is very sensitive to the Center's environment, then substantial effort ought to be devoted to the Center's observing and to the instructing which results from it, so that those instructions can then help to guide A and B toward actions which are appropriate to the Center's environment—actions which, for that week's Center environment, achieve a high value of the performance indicator. If the indicator implies a high degree of interdependence between A and B, so that the goodness of A's action depends heavily on what B's action and environment are, then, again, reports and instructions, which relay current information about B to A, are important. For such performance indicators, drawing away resources from coordination starts to lower performance earlier than is the case for other indicators.

The toy organization has now served its purpose. In its role of paradigm it has made clear the new concept, which will replace the traditional and slippery "more decentralized than", and the conjectures on which we want to shed a little light. We shall not try to restate

formally the notions of observing, reporting, instructing, action-choosing, level of detail, and design, for models of more complex organizations, having a Center and many local members, with a design specifying a whole sequence of reports and instructions in each period, not just a single interchange. One can imagine how the formal exercise would go, and carrying it out would be of no help here.

Instead we make, all at once, the enormous leap from the neat and simple world of the toy organization to the real and complex case of the two school districts. For a school district the Center is the district office. Local persons are school principals. Local actions are allocations of a local budget, curricular decisions, personnel decisions, and acts of communication with local parents. The current local environment includes current characteristics of the student population and of the teaching staff, as well as the current preferences of local parents. The school principal is the natural observer of this environment, and he can observe it in more detail or less detail. The Center's current environment includes current preferences of the governing School Board over different combinations of district-wide and individual-school performance measures, and the total current resources available to the district. "Reports" include chosen and proposed local-budget allocations, chosen or proposed curriculum changes, chosen or proposed personnel changes. "Instructions" include guidelines of various kinds, local budgets, approval or disapproval of proposed changes and allocations.

Our main purpose in this study is to see whether the new concept permits a useful way of distinguishing between the two districts--

whether total administrative effort is close in both districts, but in one of them we indeed find more freedom, accompanied by more administrative effort devoted to local expertise and less to coordination. A second purpose, pursued only in a very preliminary and sketchy manner, is to suggest ways in which more intensive study of the two districts, and of other districts, might provide evidence for or against the new Decentralization Conjecture in its behavioral form, for school districts in general. For it is in the study of the behavioral conjecture that the traditional, but extremely elusive speculations raised at the start come in: in a district with more freedom and a higher share of effort devoted to local expertise, is the design chosen a superior one, with more effective actions, which rest on a richer and more intensive familiarity with the local environment? And if so, is it because each local person (principal) identifies more strongly with his local task and, reinforced by external rewards, wants more strongly to do well with the hours available to him; and to perform reliably the reporting, observing, and action-choosing, which the organization's chosen design assigns to him?

III. A SKETCH OF DISTRICTS C AND D

Our comparisons will consider only the elementary-school component of the two districts. An extended study could deal with the secondary-school component as well. The differences we find for the elementary-school component would probably appear as well for the secondary-school component. The administration of secondary schools is considerably more

complex than that of elementary schools. At the same time, there are far fewer of them in each district, so that the "statistical" significance of inter-district differences is bound to be low, and a very intensive school-by-school study would have to compensate for the smallness of the sample. For that, the present exploratory study had insufficient resources.

General Characteristics. Districts C and D are some twenty miles apart in Northern California. C and D had 1974 populations of 97,000 and 93,000, respectively, but C's area is twice as large as D's. Average daily 1973-4 school attendance (elementary and secondary) in C and D was 26.9 thousand and 23.8 thousand, respectively. Table B below deals with social, economic, fiscal, and pupil-performance characteristics of the two districts.

Table B

	C	D
1970 census:		
Median salary, male residents	$8,700	$9,000
College-educated male residents, percent of total population	4.14	8.71
Spanish-speaking residents, percent of total population	15	14
Pupil minorities (percentages), 1972-3:		
All minorities	28.7	20.0
Spanish-surnamed	18.7	15.3
Negro	4.8	.9
Oriental	2.3	2.5
American Indian	.6	.2

	C	D
Test scores, 1972-3, statewide percentiles		
Reading		
Grade 1	69	54
2	57	58
3	52	60
Achievement tests, grade 6		
Reading	54	64
Language	69	68
Spelling	70	74
Math	53	71
Achievement tests, grade 12		
Reading	17	71
Language	48	61
Spelling	44	62
Math	50	77
Assessed valuation, per ADA, 1972-3	$12,915	$15,782
Total school tax rate (per thousand of assessed valuation)	6.23	6.10
Total district expenditures per ADA, 1972-3	$ 704	$ 702
Median teacher salary, 1972-3	$13,248	$13,782
Number of high schools	4	5
Junior high schools	7	5
Elementary schools	32	24
Average class size, secondary, 1973-4	27.4	29.4
Average class size, elementary, 1973-4	30.1	28.0
Average class size, overall	28.7	28.7

The two districts are very similar in minority composition. But C is somewhat poorer in assessed valuation than D, and D has a larger college-educated population. The two tax rates are close, and C achieves a per-pupil expenditure close to D's mainly because of a larger state contribution. D has somewhat fewer and larger elementary schools. C's test scores are higher than D's in the earlier grades, but lower in later grades. This performance discrepancy is difficult to explain and we shall certainly not attempt it here.

Budgeting, District D. In 1968, District D commissioned a well-known external firm to perform a management study. The study recommended that D adopt what it called "lump-sum budgeting": one sum allocated to each school, to be allocated rather freely by the school. The idea acquired wide support from principals, teachers, and parent groups, and was approved by the School Board in 1970; 1971-2 was the first year in which D made its budget decisions in essentially the current manner.

The process which generates the following year's budget for a school is described in a detailed Manual. The Manual states, in its introduction, that,

> ...budgeting is an integral part of a larger process aimed at placing pertinent decision-making responsibility and authority closer to the classroom. The purpose of this larger process is to help reach the stated goal of this district, which is to re-design the educational system to meet the individual needs of children. In order to accomplish this, it is necessary to recognize the needs of each school. Just as no two individual children are alike, so no two individual schools are alike. They should not be staffed alike and should not have to abide by inflexible rules... The responsibility for the budget and the conduct of the educational program it supports, belongs to the principal and his staff.....

A number of annual budgeting steps are described in the Manual, and there is a date at which they are to be completed. The steps amount to this: the school is given its lump-sum allocation, based on next year's estimated school enrollment, and supplemented by a small allowance for equipment replacement, which is based on total replacement value of the school's equipment, as well as estimated enrollment. The Center--specifically, one specialist in the district office--estimates enrollment, but the school can challenge the estimate, possible stimulating a revision. The school allocates its lump sum among teachers, instructional aides, equipment, supplies, services, and several other accounts. It is asked to justify its choices.

To do so, the school is encouraged to arrange its arguments in the spirit of "program budgeting", now so pleasing to public-sector managers everywhere. Specifically, the school may identify "activity goals" ("individualized reading", "individualized development of basic communication skills", "a diagnostic approach to mathematics"). Programs to meet these goals are specified, their budgetary implications drawn, and a way of measuring goal achievement proposed.

However justified, the school's allocation of its budget must meet one crucial constraint: the school's pupil/teacher ratio in each grade must not exceed the ratio which the state requires for the whole district in that grade; and at the same time, no individual class must exceed the upper size limit currently agreed upon with the responsible teachers' organization. A school which finds it too difficult to meet these constraints may request a special status, in which the instructional salaries are removed from its lump sum, and the amount spent on them

is instead settled by direct negotiation between school and district office. A school which is not in the special status, but turns out to violate the state requirement, and so causes the district to incur a state penalty (a reduction in state funds), is "billed" a portion of the penalty in the form of a reduction in its next budget. Because the combined state and teachers' organization constraint is so sharp, a school's budget-allocating freedom has, in practice, amounted to freedom to choose among mixes of instructional aides, equipment, supplies, services, and maintenance.*

Regular teaching staff, then, is not, practically speaking, part of the variable mix. Still, the choosable mixes form a whole continuum, and the budgeting procedure requires only that a school's choice from this continuum be a thoughtful one--the "goal-specification" exercise surely requires some thought--and that the choice be carefully reported and recorded. The choice is to be defended in the course of a School-Center dialogue, and the school may well revise its proposed choice as a result of the dialogue.

Once formally chosen and reported, the coming year's school budget is still not frozen. During the year itself, transfers between accounts--so as to alter the intended allocation--are freely permitted the school. The school informs the district office of the proposed transfer, and it is routinely ratified. The school receives accurate monthly print-outs

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*In effect, a school not on the special status can spend its given sum as it wishes as long as it meets the constraints (or can violate the state constraint if it is willing to pay the penalty). But for some reason the district is unwilling to quite call a spade a spade: it issues "guidelines" prescribing the number of teachers and teachers' aides (two

of its expenditures and balances in each budget category, and can obtain more frequent reports if it wishes. So far, schools have been permitted to carry over any unspent balances to the following year. Actual school purchases of many kinds of items can be made freely without use of approved District vendors.

Budgeting, District C. Formally and in practice, C's budgeting procedure presents a strong contrast to D's. C does not issue a manual, but only a brief summary description of the legal requirements for district budgeting, and some general conditions which sound budgeting ought to fulfill.

As in District D, the budgeting cycle begins with enrollment projections. As in District D, these projections are the specialty of one person in the district office. He does not systematically request local information from each school--i.e., a local survey of parents' plans for next year--but bases the projection on district-wide trends. As in D, a school may challenge the initial prediction and a revision may result.

A Budgeting Calendar gives the annual events which begin with the enrollment projection and end with the issuance of next year's school budgets. The Calendar is very simple compared to D's: it lists 15 events, each described in a few words, while D's calendar lists 33 events, many described in great detail. Only one pair of events in C's calendar--

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aides equalling one teacher) which each school is to hire per pupil in each grade. A school's lump sum is insufficient to hire more regular teachers than the guidelines specify for its enrollment, though it might hire an extra aide or two. It can hire fewer, and can substitute aides for teachers, as long as it meets the two constraints just described. It is not clear why the guidelines are introduced at all, except perhaps that the district office mildly prefers all schools to come close to these numbers and expresses the wish as guidelines.

"Budget materials delivered to principals and administrators" and "School budget requests sent to district office"--specifically involves school principals. In D's calendar 16 events specifically involve principals. A school"s "budget requests" in C are the amounts the school wants for specific capital-outlay items and for certain supply categories.

The district office's final product in the budgeting cycle is a budget for each school, which specifies for each category a dollar amount. The amount is based on the school's estimated enrollment and, for certain accounts, on the budget requests as well. Each school budget must meet various state and district constraints, notably, as in D, a maximum--class-size and teacher-pupil-ratio constraint.

During the budgeted year itself, each school receives reports of its balances in each category, but--judging from the interviews (see Section IV C) --these have so far been much less frequent and less reliable than the reports received by D schools. As for a school's transferring across certain budget categories, this happens, but its formal legality appears ambiguous. District office personnel who were interviewed perceived transfers to be possible, with permission, but not widespread. Some school principals perceive it to be prohibited, or at least discouraged, while others do not. Those who do not, engage in transfers across three supply accounts in particular, after informing the District Office. The three accounts are: "other expenses of instruction", "other health services expenses", and "other plant operation expenses". Another study of Districts C and D ([14]) considered transfers across these three accounts, accounts, and compared variability with respect to school expenditures in the three accounts in the two districts. For each of the three accounts, variances of annual dollars spent per pupil, across the district's elementary schools, were computed for each district. The study found the variances in D to be significantly higher than those in C.

With regard to a school's actual purchases, interview evidence suggests that the use of district-approved vendors--with the purchase arranged by the Center--is required for more items than is the case in D.

The District Office's Role in Curricula in C and D. In District C, the center's traditional major role in controlling schools' curricular changes has now been clearly formalized, as a result of negotiations with the responsible teachers' organization. A "Memorandum of Understanding" between the district and the organization contains more than agreements as to class-size maxima, hiring procedures, and other working conditions customarily dealt with in such negotiations. The Memorandum also has a lengthy and detailed section called "Curriculum Development". Presumably the teachers' organization is interested in this issue, because curricular changes affect the quality and the demands of a teacher's working day.

Each elementary school, according to the agreement, is to have its own Curriculum Committee, composed of as many teachers as it wishes. There is to be a District Elementary Curriculum Council and a District Secondary Curriculum Council. The Elementary Curriculum Council comprises one representative from each school Committee, two principals, two community representatives, and a major figure in the district office, the Director of Elementary Education, who convenes the Council and serves as its Administrative Director. A local school proposes its curricular changes and innovations to the Council. If approved, the Council forwards the proposal to the District's Curriculum Review Committee. If the proposal is not approved, then its minority supporters, if any, may still

send it to the Review Committee. On the Review Committee sit the Superintendent, three district office administrators including, again, the Director of Elementary Education, three teacher members from the Elementary Curriculum Council, and three from the Secondary Curriculum Council. The Review Committee can itself propose district-wide curriculum changes to the Elementary Curriculum Council for discussion there. In any case, the Review Committee itself has the last word in approving smaller changes, and in forwarding larger ones to the Board for final decision.

The formal wording in the Memorandum leaves one in the dark, needless to say, as to precisely how "large" a school's change or innovation must be before it has to go to the Council, and thence to the Review Committee. But Minutes of the Council, and supporting documents, provide clues as to what happened in practice in the scheme's first year. Among the issues considered:

--Staggered Reading. Since several schools were proposing it at the intermediate level, the Council appointed a staggered-reading subcommittee to issue general guidelines. The guidelines turned out to deal largely with evaluating a staggered reading program; a detailed evaluation scheme--with specific tests, and a calendar for giving them--is to be followed by each school adopting staggered reading. Aside from guidelines, the Council separately considered proposals from at least six schools. One school's proposal was approved, provided it changed its evaluation methods to conform to the guidelines. Two proposals were rejected, one being returned to the proposing school for substantial revision. Three programs were

approved as proposed. All approved programs went to the Review Committee, and then ultimately to the Board, since a lengthening of the school day was at issue.

--In-service Programs. The Council authorized two minimum days for each school, the time released to be used for in-service programs. Specific programs proposed by several schools were approved.

--Use of School Facilities. The Council agreed to study the way classrooms are used in schools , and to develop guidelines for the use of classrooms for purposes other than regular instruction.

--Instructional Materials (Including Textbooks). Some of the Council's members, and additional school representatives, form an Instructional Materials Selection Committee, which recommends materials in each subject-matter area to schools. The lists issued contain some options, but it is rare for a school to select materials not on the list.

--School-Pupil Report Procedures. The Council approved, for a one year trial, one school's proposal to issue extra (i.e., more frequent) reports to parents.

--Administrative Survey. The Council helped prepare a survey of elementary principals' agreement with some thirty proposed district-wide goals for its elementary schools, (e.g., "a minimum day should replace preparation periods", "more testing materials for math should be acquired", "all school plants should close at four, in view of the fact that there will be no salary improvement").

District C has an Innovative Projects Fund, amounting most recently to eighty-five thousand dollars. Schools propose projects to be supported from the Fund, either directly to the Director of Elementary Education or via the Curriculum Council. But final selection of winning projects appears to rest with the Director.

An Executive Committee composed of the Superintendent, the Directors of Elementary and Secondary Education, and several other senior district office persons, meets regularly. In its minutes are found a wide variety of items. Many of them involve budgetary changes for particular schools, often quite minor ones.

District D has no analogue of C's Curriculum Council. There is an Executive Committee, as in C. But documents give the impression that, as compared to C, D has less frequent reporting of variations and special problems from schools to the Center. The Center's efforts have to do with the routine burdens of record-keeping, disbursement, dealing with state agencies, and annual budgeting, as well as with the settling of broad district policy questions. C's district office has the same tasks, but in addition, appears to devote much more effort to detailed dialogue with individual schools and with committees in which schools are represented.*

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*There are, in District D, two area (i.e., regional) superintendents. A school reports to one of them. He appears not to have formal authority on specific curriculum, budgeting, or personnel issues. His role seems rather to be that of a knowledge depository--he is to keep informed of major changes in his schools.

Special Programs Funded Outside the District. In both Districts, a number of schools obtain funds from Federal and state programs. A school's funds from such sources are, to a large extent, the result of the school's initiative, with administrative assistance from the district office. C has a larger total of NSEA funds, but this reflects more qualifying (sufficiently low-income) pupils, not greater school efforts. In both C and D, the district office helps schools with applications for outside funds, and, once support is received, records expenditures and balances, and assists in evaluating the program. Both district offices have specialists for these tasks. C has, in fact, issued written guidelines for schools applying for certain funds, while D appears not to have done so. For several programs, C has adopted a standardized evaluation scheme to be used by all participating schools. D has not.

District office resources. Expenditures for operating the two district offices in 1972-3 are listed below in Table C.

Table C

Expenditures on District-Office Administration, 1972-3

	C	D
Certified salaries		
Expenditures (thousands)	$ 81.6	$227.7
Dollars per ADA	3.03	9.59
Positions	3	9.3
Classified salaries		
Expenditures (thousands)	337.4	328
Dollars per ADA	12.5	13.8
Positions	32.5	35.8

Other expenses of administration		
Expenditures (thousands)	86.8	120.1
Dollars per ADA	3.25	5.05
Totals, above three accounts		
Total expenditures (thousands)	505.6	675.9
Total dollars per ADA	18.8	28.4
Percent of total district expenditures	1.8%	2.8%

District D, then, spent more on its district office, the main difference being six extra, relatively high-level, administrative positions.

IV. THE QUESTIONNAIRE AND THE INTERVIEWS

A. General Remarks

The study's data were of three sorts: (1) A questionnaire, sent to the elementary school principals in each district and returned by 25 out of 28 principals in C, by 20 out of 24 in D, with follow-ups to fill in missing or ambiguously reported answers. (2) Interviews with five principals in each district and with key district office staff in each district. In the principal interviews, the principal was asked to talk as he wished about his tasks and how the organization of the district affects them. (3) District office documents--official publications, budgetary data, minutes, memoranda.

The trouble with interviews and questionnaires is that they reveal only the individual's perceptions as to what he does and how the organization affects him. Prolonged (and costly) observation, on the other hand, in the "ethnographic" style, could place the burden of objectivity

on the investigator. A study with far greater resources than the present one could attempt research of that sort into the activities of school principals and district office staff. One study of the ethnographic type--a study of a school principal ([15])--exists. It shows what might be learned, through prolonged observation, about the true way a member of an organization divides his efforts among tasks, and about how organizational style can affect the division.

B. The Questionnaire

The questions asked, the responses, and several statistical tests are reported in Table D below. Unless otherwise indicated, a number is the number of responding schools in the given category; a percentage following it is the same number expressed as a percentage of the total number of questionnaire respondents in the district.

Table D

ITEM	District C 25 Respondents	District D 20 Respondents
Curriculum		
1. Does your school have ungraded classes? Yes.	10/40%	8/45%
Mean number of ungraded classrooms, all schools reporting Yes	7.6	6.2
Variance of number of ungraded classrooms, all schools reporting Yes	8.1	10.3
District office involvement, for schools reporting Yes		
"District office approval required"	4	0
"District office informed" or "very little involvement"	3	2
"No involvement"	1	5
Unspecified	2	1

	District C	District D
2. Does your school have a staggered reading schedule?		
Staggered schedule in grades 1-3 or K-3	5	6
Staggered schedule in grades 1-6 or K-6	18	8
Staggered schedule in other grade groupings	2	6
District office involvement		
"District office approval required"	10	0
"District office informed" or "very little involvement"	3	3
"No involvement"	8	17
Unspecified	4	0
3. Does your school have individualized instruction? Yes	22/88%	20/100%
In which grades?		
K-3 or 1-3	9	4
K-6 or 1-6	12	6
Other groupings	3	11
Are these programs mandated by state of federal guidelines?		
All are	5	2
Some are	2	1
None are	15	17
District office involvement		
"District office approval required"	5	0
"District office informed" or "very little involvement"	13	0
No involvement	2	20
Unspecified	2	0

	District C	District D
4. List special curricular programs used in your school.		
Number listed		
1 or 2	15	11
3 or 4	7	5
More than 4	3	4
Subject areas in which one or more of the listed programs lie:		
Mathematics plus (possibly) other areas but not reading or language	4	1
Reading plus (possibly) other areas but not math or language	4	1
Language plus (possibly) other areas but not math or reading	2	0
At least two out of math, reading or language (plus, possibly, other areas)	2	15
Neither math nor reading nor language	6	1
Open classroom (may overlap one of the above categories)	0	2
District office involvement		
"Approval required" or other substantial involvement in one or more of the programs	9	0
Little involvement in any program	6	2
No involvement	3	16
Unspecified	7	2
5. Does your school have any team teaching? Yes.	12/48%	14/70%
District office involvement		
"District office approval required"	4	0
"District office informed" or "very little involvement"	4	3
No involvement	2	11
Unspecified	2	0

	District C	District D
6. Does your school have a learning or media center? Yes.	8	17
If so, what were the sources of funds? (Several sources are possible)		
Title 1 or ECE	6	7
SB 90	0	3
District	2	6
Local school budget	0	10
PTA	0	6
What staff do you have for the center?		
Volunteer parents	1	9
Paid staff	7	14
District office involvement.		
Substantial (approval required and and/or funding arranged)	6	3
Little	0	4
None	0	9
Unspecified	2	1
Personnel		
7. When was the last time you filled a teaching position at your school?		
In last two years	21	20
Earlier	4	0
For vacancies of the last two years, did the principal have some choice of candidates in filling the position?		
Yes	11/52%	16/80%
No	10/48%	4/20%
8. Does your school have paraprofessionals? Yes.	16/64%	16/80%
Who participates in the selection of these persons?		
Principal and teachers	12	16
Principal but not teachers	4	0
Parents	4	4
District office	5	0

	District C	District D
9. Describe any in-service programs which your school has developed. One or more programs mentioned.	13/52%	16/80%
10. Describe any faculty committees which meet regularly in your school.		
No committees	4/16%	3/15%
Instructional or curriculum committee	20	8
Human relations committee	1	4
Psychological committee	2	0
General advisory committee	2	12
Special education or MGM committee	0	2
Student health and welfare committee	0	1
Textbook committee	0	1
Staff committee for grades or grade groups	3	1
Principal's Time		
11. How many evenings per week do you spend, on the average, at school-related meetings?		
Mean number	1.4	1.9
Variance	.7	.9
12. How many hours do you spend per day, on the average, at the school site?		
Mean number of hours	9.1	9.0
Variance	.68	.81
13. How many hours do you spend per average school week at other locations (including home) in school-related activities?		
Mean number of hours	7.0	7.9
Variance	23.8	12.5
14. Of the total time spent in your office, please indicate the approximate percent spent alone (or with office staff)		
Mean	40	44
Variance	466	353

	District C	District D
with a child (possibly accompanied by a teacher)		
Mean	13	11
Variance	48.1	23.3
(Ratio of variances: $\frac{s_c^2}{s_d^2} = 2.07$		
$F_{.95}$ (24, 19) = 2.03)		
with a parent (possibly accompanied by a child or teacher)		
Mean	12	16
Variance	50.3	24.7
(Ratio of variances: $\frac{s_c^2}{s_d^2} = 2.03$)		
with teacher only		
Mean	35	29
Variance	371	256
15. Please indicate the approximate time spent in the following activities outside of your office.		
Hours per week spent on paperwork		
Mean	8.5	7.1
Variance	22.1	13.4
Hours per week meeting with teaching staff		
Mean	6.3	8.4
Variance	15.1	10.6
Hours per week meeting with parent groups		
Mean	2.6	6.1
Variance	9.3	7.1

	District C	District D
Hours per week spent in contacts (telephone or visits) with district office staff		
Mean	1.3	3.7
Variance	3.4	3.8
Community Involvement		
16. Does your school have a regular newsletter or bulletin sent to parents?		
Yes	21/84%	19/95%
No	4/16%	1/5%
With what frequency?		
Less than monthly	1	1
Monthly	19	15
More than monthly	1	3
17. Please list all parent and/or community groups at your school.		
Groups listed include:		
PTA	25	20
Parent advisory	19	20
Other groups: more than two	0	2
Other groups: one or two	2	4
18. Does your school have parent volunteers? Yes.	25/100%	20/100%
19. List some specific decisions, for each of the following four areas, in which parents have been involved in the past two years.		
Number of schools listing one or more decisions, in each of the given areas, aside from decisions connected with specifically funded programs where parent involvement is required.		
Personnel	5	6
Budget	1	14
Curriculum	22	18
Textbooks	4	9
No decision listed in any of these areas	3	0
Decisions listed in curriculum area only	6	2

	District C	District D
Budgeting		
20. Please estimate the number of hours during the year that you devote to preparation of the following year's budget.		
Number of schools reporting some figure	20	18
Mean number of hours reported	8.1	23.4
Standard deviation	8.1	17
95% confidence interval for the amount by which D's mean exceeds C's mean: 15.3 ± 7.3		
Please estimate the number of hours per year devoted to administration of the current year's budget.		
Number of schools reporting some figure	17	13
Mean number of hours reported	78	92
Standard deviation	9.4	13.1
95% confidence interval: 34 ± 26.9		
How do you determine current balances in each budget category?		
District reports	25	20
School-site record-keeping	15	10
Telephone district office	2	8
How often is this information revised?		
Monthly	10	20
Less frequently than monthly	15	0
Principal's Length of Service		
21. Years at this school as principal		
Mean	4.5	3.7
Variance	11.0	4.1
22. Total years as principal		
Mean	17.3	13.4
Variance	49.3	44.1

C. The Interviews

The statements made in the interviews on a variety of issues will now be illustrated by quotations, paraphrases, and summaries.

1. District D

a. The Burdens of Local Expertise: Budgeting

School 1: "I spend a lot of time watching my expenditures to see that I don't go over my budget."

School 2: "I spend the equivalent of at least two whole days a year checking up on the district office's accounting."

School 3: "There is much more budgeting paperwork than under the old "centralized" system--the time spent in budgeting has more than doubled."

School 5: "When times are tight and the discretionary budget is low, that's when you become particularly aware of how tricky and time-consuming it is to do a good job of spending it."

Schools 1, 4, 5: The principal of School 4 spends some of his budget on a quarter-time clerk to keep track of expenditures and balances and other routine tasks. Principals of 1 and 5 expressed a wish for similar help.

Several of the principals operated under the previous "centralized" system in District D and made now-versus-then comparisons about budgeting In the old system a principal could obtain changes in his assigned budget, but it was rare, because it was difficult and time-consuming. "You had to go in and fight for what you wanted." (School 2)

b. The Burdens of Local Expertise: Curriculum

School 1: "I inform the district as to some curriculum changes as a courtesy and to protect myself, but I can make virtually all the curriculum changes which come up without any approval."

School 2: "Occasional guidelines are the only thing that cramp my style in curriculum matters."

School 3: "Curriculum development is my thing, and in-service programs for teachers are the key to curriculum innovations." This principal has spent substantial effort in developing twenty different in-service programs. In addition, he encourages his teachers to propose innovations, and, together with the teachers, he generates annually a School Plan. The district office encourages this sort of thing, but doesn't make a detailed requirement out of it. The Plan selects curricular "goals"--subject areas in which the school will try to expand--as well as "performance objectives", that is, improvement with respect to selected measures of student achievement. The Plan guides the innovations and changes which teachers propose. For some innovations, the school seeks extra nondistrict funds. The proposal-writing which this requires is a school effort, with the principal playing the leading role. But the district office has a proposal-writing resource person who has been consulted by this school.

School 4: A School Instructional Committee meets weekly, works hard, and has generated a number of curricular innovations, a Learning Center in particular.

School 5: "Innovative textbooks have been found and used

by several teachers. No district office approval of any kind was required, beyond informing them routinely. The teachers here have a sense of participation which they may not have had when the principal had no discretionary budget at all. How he chooses affects them, and they are eager to help him decide ... They help especially with new curriculum ideas."

c. The Burdens of Local Expertise: Personnel

School 1: "Three teacher-aide positions were recently vacated. Finding suitable people for them is quite a chore for the principal. In general, I keep personnel selection close to me; but I do get teachers' reactions in choosing the aides."

School 2: A small school with declining enrollment. "The only personnel options open to me are to squeeze more teacher performance out of a tight budget. In-service programs help."

School 3: "Filling teacher vacancies is rare. But other vacancies arise every year. I have lots of freedom in filling them, and we do it with care. On the matter of teacher assignment, the class-size constraint has to be met. If I want to make two classrooms out of one, so that a small part of some teacher's day involves a class size greater than the mandated size, then I have to walk the proposal through the district office. That would take a lot of effort."

School 4: This is a school with substantial outside (Compensatory Education) funds. In the last year two certificated vacancies and three classified (teacher-aide) ones opened up, supported by these funds. The hiring decisions were entirely local, and the principal examined a large number of candidates.

School 5: "I enlist the help of teachers in filling aide vacancies. We try to find a special sort of person whom we all agree fits the Learning Center and the other programs which we have designed together. One recent search was a very time-consuming business."

d. The Burdens of Local Expertise: Obtaining Parents' Views

School 1: Tries to arrange systematic classroom visits by parents, especially members of the Parent Advisory Group, which his Title 1 money requires. Some teachers are not too happy with these visits. The PAG and other parent meetings take up about five evenings a month, and perhaps three or four daytime hours a week,

School 2: "This is a small local school. It's not a fighter compared with others. The parents' main concern currently is keeping the school open in the face of declining enrollment. We don't have much energy left for major curriculum changes." Parents are involved in an annual "Needs Assessment" exercise, but aside from that, "this school runs itself."

School 3: "Parents don't really participate in the budgeting decisions." He gives parents information about these decisions and listens to reactions, but the work is his. Special purpose money-raising activities are different. He actively enlists parents and works with them on these. There is strong trust between parents and teachers in this school, and parents don't interfere.

School 4: This school has more minority students than most in the district and consequently, has more nondistrict funds for programs which require parent committees. The school has a printed brochure

describing its special programs and intended for parents. There are "Parent Education" and "Parent Effectiveness Training" workshops. Two assistant administrators (one also a teacher and one not) release some of the principal's time from routine administrative chores, and the main use of the time so released is contact with parents. It is nondistrict funds which make possible this unusual effort at communicating with parents. But he believes it is essential for a school of this sort and devotes much more effort to it than he would need to, if he just wanted to comply formally with the guidelines for the externally funded programs.

School 5: "If I had more time, I would try to involve parents on a daily basis with curriculum development. I think that's one of the things decentralization is for."

e. Sharing the Local-Expertise Burden: Governance of the School

School 1: Teachers are organized into four teams ("reading", "mathematics", "self-enhancement", "media"). Each meets every other week for an hour before school. They make specific proposals, which are taken up in full faculty meetings and are reflected in curriculum, budgeting, and staffing decisions.

School 2: This is a small school which "runs inself". There is no formal organizing of teachers into groups, but there are frequent informal staff meetings.

School 3: Each teacher receives fifty dollars for classroom supplies and is told to "spend it as you wish." There is no formal organization of teachers into groups.

School 4: Teachers and aides are organized into five units

(pre-school, two K-4 units, 5-6, and a "support services" unit). Unit leaders receive a stipend, and in addition, Compensatory Education funds are used to release the equivalent of a 5/6 time position, which is spread over several of the leaders. The leaders meet weekly as a School Instructional Committee. Their responsibilities are mainly curricular, but they also get heavily involved in planning the budget. The unit leaders don't make personnel decisions: the district teacher's organization might get concerned if they did. Just as School 4's nondistrict funds allow unusual effort to be devoted to parent communication, so these funds allow a fairly elaborate scheme of internal governance. But even without the funds, the principal would attempt, as much as possible, a similar sharing of the administrative burden.

School 5: Teachers are organized into several curriculum-area committees, and each elects a chairperson. The principal finds this an efficient way of generating curricular and budgeting suggestions.

2. District C

a. Curriculum Changes: Local and District Office Efforts

School 1: The school began, four years ago, an experiment in ability-level grouping in Grades 1 to 4 (the experiment was abandoned in the present year because of an enrollment drop). The innovation was proposed initially by several teachers to a meeting of parents, who reacted favorably. There were extensive talks about it with the district's Director of Elementary Education, whose approval was required. A one-year trial followed. A constraint in any such experiment is the 32-pupil class-size limit required by the current agreement with the teachers' organization.

The school received a small grant for its media center from the district's Innovative Projects Fund.

School 2: "The district Curriculum Council has more to say about curriculum changes than anyone else." It has been district policy to develop individualized instruction, "but each school moves toward this goal at its own pace." The school started an ungraded primary two years ago. It has been an Early Childhood Education (nondistrict funds) program, and for that reason obtaining district approval was routine.

School 3: "There are district guidelines on textbook selections which we don't have to follow, but we respect them and we do follow them." One guideline, for example, says that whenever possible, the school should use a three-grade book sequence (a 3-book uniform series, from the same publisher) in grades 1-3 and another in 4-6.

"Real curricular changes are in the hands of the district staff." This school has considered ability grouping in the upper grades and staggered reading in the sixth. "But such proposals would have to go before the Curriculum Council, and we haven't made them." The school does have a Mentally Gifted Minor program, which serves a number of shcools in the district. Setting it up heavily involved the district office.

School 4: "We first proposed staggered reading in grades 1-6 three years ago and were turned down. Last spring we proposed it again, to the Curriculum Council, and this time it passed."

The district office gave the school permission to staff its Learning Center by using teachers' preparation time.

The school currently has seven projects supported by the districts' Innovative Projects Fund.

School 5: "The Curriculum Council has turned out to be a way of keeping in touch with other schools' problems and proposals and to learn from each other."

b. Budgeting

School 1: "We provide very little input for the budgeting process." He would like to be able to make transfers from the Capital Outlay account to the Instructional Supplies account, but he cannot. He is grateful for one modest bit of flexibility: He is permitted to carry over unspent capital outlay funds from one year to the next. He wishes the same were true of Instructional Supplies money, but it isn't. All purchases have to go through Central Purchasing and are obtained from designated district vendors, even though the school often doesn't need the quality of the vendor's merchandise, and often could get the same item at a sale price. The district tries to buy in bulk, so the school often has to wait until a sufficiently large district-wide order accumulates, before it gets the requested item. To keep track of the way his budget is spent, he asks for regular purchase-order printouts, as well as budget-account printouts. Many principals don't. The previous year, nevertheless, he went about $400 over his budget, but this wasn't deducted from the the current year's budget. "So there is sort of an unintentional flexibility--it seems that you can go over the budget a bit, but it certainly isn't something you would plan to do intentionally."

School 2: "We just don't have anything to say about the budget." The school does have Title 1 funds, as well as some ECE and

Headstart funds. The management of the Title 1 funds is strictly standardized, according to a scheme chosen by the district and used in all its Title 1 schools--the scheme deals with goal-setting, account-keeping, and evaluation.

School 3: "We have no budget trade-offs." Last year, in April, the school had $80 left in its Instructional Supplies Account, and this was frozen by the district in order to meet anticipated teachers' salary demands. This year several principals, fearing a similar freeze, plan to spend all their funds by January. But he won't do this. "I don't think it's fair." "My job is to see that teachers get what they need to do the job they have to do. If they didn't, I would ask for time at a principals' meeting to discuss the problem, to see if it is a general problem, or if it is my fault." Perhaps some pressure to increase some budget category might result. As it is, he and other principals do engage in some bilateral trading to ease the budget rigidities a bit. One school will order items for another in budget categories where it has good current balances, and will trade these for items in budget categories where the ceiling has been reached. (He has sometimes picked up items so acquired in his own car.)

Last year, on top of the category ceilings, there was another constraint: The Director of Elementary Education received purchase orders and blue-pencilled items he deemed unessential.

School 4: "We can't transfer across accounts. There have certainly been times when I wished we could." We do have considerable local autonomy in spending Title 1 funds, though even here the district

office has a Director of Compensatory Education who monitors our expenditures, and, for example, consults our reading test scores in doing so."

School 5: "Sometimes it seems attractive to have greater budgeting flexibility than we have. But I suspect it would be very time-consuming to use it effectively. I'm not really sure we could do that much better a job of budget allocation, as compared with the way it's done now."

c. Schools and Parents

School 1: Parents are beginning to be more vocal. A group of this school's parents called the district office and asked to speak to the superintendent about a number of issues. He didn't respond. The parents then called Board members. The district office asked the principal to "handle whatever is the problem", and at one point he was asked "why don't you keep your parents in line?" The principal met with the parents, who repeated that they "wanted to talk to the boss." He advised them to write a letter to the Board and the Superintendent and to ask for a meeting, stating the questions they wanted answered. They wrote the letter and showed it to the principal, who approved it. The Board responded to the letter, but the Superintendent did not. A meeting was arranged with Board members, and at this meeting the Superintendent turned up after all. The attending parents expressed anger at the elusiveness of those who run the district, and at the fact that messages from parents to the Center always have to go through the principal. It has taught them how to go to the source of information, even if that source is a Board member.

School 2: The districts' principals meet regularly, and this

is a forum for expressing dissatisfaction with particular budget amounts and other matters. Parents' complaints about lack of local autonomy have been shared at these meetings. In this school there was, not long ago, a physically unfit teacher who was often absent. Parents' complaints were passed on to the Director of Certificated Personnel. When this brought no results, parents decided to climb the authority ladder themselves. Eventually, the district office approved the idea that the same substitute teacher should always be available to the school, rather than continually changing substitutes.

School 4: The help of parents was obtained in the annual enrollment-prediction process, which is crucial in determining the number of teachers in the school the following year. The district office's enrollment predictor accepts local supplementary information, but few schools provide it. In the case of School 4, parents' enrollment intentions for the following year were gathered, and the district office agreed to increase its original enrollment predictions for the coming year. Mobile classrooms will be installed in the summer to allow for the extra enrollment. Parents understand the importance of the enrollment prediction and were cooperative.

School 4 has Title 1 funds, and the required Parent Advisory Group is, the principal believes, unusually active, sometimes meeting twice a month.

School 5: Parents' main involvement is of the usual PTA money-raising sort. "There haven't been curriculum matters on which strong parent input was received."

d. Personnel

School 1: The teachers work out their own assignments, and the principal intervenes only when they can't agree. He didn't need to do so, even this year, when an enrollment drop forced considerable reshuffling of assignments.

School 5: "Our only new hire this year was an aide, chosen from two sent us by the district office. There was some feeling among staff and parents that it would have been better to spend more time, choosing from a longer list."

V. AN INTREPRETATION

A. Freedom and Local Effort

The preceding general description of the two districts, the questionnaire, and the school-principal interviews, all lead one to characterize--crudely and tentatively--the organizational differences between the two districts.

A school in D is indeed permitted a wider choice of actions in budgeting than a school in C. In curriculum matters as well, the choices a D school can make whatever the instructions from the center, include all the choices a C school can make, and more besides. Both schools can enlarge the set of permitted curriculum choices by some extra effort in obtaining central approval, but for any given addition to both schools' permitted choices, the effort required is greater for the C school than for the D school. With respect to personnel and parent-communication actions, differences with regard to freedom are less significant, but here also, C is not freer than D.

The principals in D, however, are intensely aware that to choose carefully from their large set of choices requires more local effort than if the set were smaller, as it was in the days before "decentralization". Hence, to do well, with regard both to his own rewards and his school's contribution to the district's performance, an unassisted D principal must, more than a traditional one, draw working hours away from routine tasks--discipline and routine administration--and must use these hours instead for the tasks of local expertise on whose performance he will be judged. That is a general perception running strongly through all the interviews in D: "Much more paperwork" (School 1); "more freedom , but more headaches" (School 2); "decentralization takes much more time ... more problems get dumped on the principal than he has the resources to deal with" (School 3); "the principal's job description has expanded under decentralization" (School 4); "many more challenges, a lot more work" (School 5); "not all principals like it, because all of them have to work more to do a good job" (district office person). One school in D (School 4) has in fact, as we saw, dealt with the problem by paying for additional local administrative effort (part-time assistants to the principal).

B. Questionnaire Evidence

To what extent do the questionnaire replies reflect the same view?

Principals' Time. With regard to the questions about the use of principals' time, the answers are, of course, rough individual perceptions; they are certainly not records. Nevertheless D appears distinctly different from C with regard to most of the time questions. For budget

preparation and budget administration (Item 20), the mean reported annual hours in D are, respectively, about 3 times and 1 1/2 times the hours in C. The two differences are sufficiently large that in each case, there are only positive numbers in a 95% confidence interval for the amount by which D's mean exceeds C's mean. Of the four outside-the-office activities dealt with in Item 15, the main inter-district differences are in meetings with parent groups and contact with district office staff; in both, D's mean hours per week are greater.

With regard to distribution of time, there appears to be more uniformity among D schools than among C schools. While most of the means in Items 11 to 15 were close in the two districts, all but one of the sample variances was lower in D than in C; the difference in two cases (Item 14) was sufficient to reject at the 5% level the hypothesis that both sets of principals belong to a common population with respect to these two aspects of time distribution. One tentative interpretation is that most D principals have formed roughly the same picture of a good "decentralized" principal. In addition to hours spent alone and with an individual child (presumably for routine discipline), he has to spend substantial in-office time with teachers, and somewhat less with parents. Most time outside the office is spent, again, with teaching staff, a bit less with parent groups, and less still with district office staff. This reflects, perhaps, the dominant role of careful curriculum decisions--particularly time-consuming innovations--in the work of a "good" decentralized principal, and the somewhat less important role of parent-communication activities.

In C, on the other hand, the picture of a "good" principal is less distinct. A principal may excel by doing routine tasks well and devoting much time to them. He does not feel judged according to whether or not he maintains a steady interest in curricular innovation, and makes constant, careful, detailed observation as to his teachers' curricular preferences and abilities and his students' performance. It then becomes, as compared to D, more a matter of individual taste, as to what relative times are to be devoted to routine tasks and to the various tasks of local expertise. The result is higher dispersions in C than in D.

This interpretation has to remain nothing but conjecture for the present. It would take highly systematic and intensive study of many principals--the "ethnographic" research described in III A above--to settle it.

Curricular Innovations. Several questionnaire items deal with specific curricular innovations. These are changes which a school could choose to avoid, and which typically take extra principal and staff time to propose, to introduce, to get under way, and to maintain. The questionnaire asked about four specific ones: Ungraded classes, staggered reading, individualized instruction, and team teaching (Items 1, 2, 3, 5). Other innovations were given by the responding principals (Item 4). Team teaching was reported by 70% of D schools and 48% of C schools. The proportions of schools reporting the other three innovations were close for the two districts. For each of the four specified innovations, and for the special curricular programs

named by responding principals (Item 4), D appears to exhibit somewhat more variety among its schools than C does. The number of ungraded classrooms in the school, the grades with a staggered reading schedule, the grades with individualized instruction*, and the curriculum areas with special programs--all these appear somewhat more varied over the D schools than over the C schools. Some of the proceedings of C's Curriculum Council suggest, as we saw, that uniform policies--with regard to staggered reading, for example--may be imposed through the Council and may explain C's lower variety.

If there is indeed greater variety in D schools, that is consistent with our conjecture that a D principal spends more time on curricular innovation. To choose one's own special version of a curricular innovation, appropriate to the local environment, probably takes more time than to follow district guidelines laid out, for example, by a curriculum council. On the other hand, a C principal and his teaching staff probably spend more time than a D principal on coordination tasks in the curriculum area--on informing the district (especially the council) as to local curricular problems and proposed remedies, and informing himself as to district office views and current curricular experiences throughout the district.

Communication with Parents. Item 19 was the only one dealing with parents where the C and D responses differed markedly. The item asked

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*For both C and D, roughly the same proportion of the schools reporting individualized instruction programs also report that these programs are not required as a condition of receiving state or federal funds.

for specific decisions in which parents had participated. Fourteen D schools, but only one C school, listed "budget" as an area in which such decisions had been made; nine D schools and four C schools listed "textbooks". The "curriculum" area was listed about equally often in both sets of schools.

Personnel In-service programs for teachers can require considerable local effort to initiate and maintain; they may also lead to curricular innovations or changes. Eighty percent of the D schools, but fifty-two percent of the C schools, mentioned one or more such programs. Faculty committees meeting regularly were reported with about equal frequency in C and D (Item 10), but the labelling of such committees was somewhat more varied in D. Substantially more D schools than C schools reported that the principal had some choice in filling recent vacancies (Item 7). Use of paraprofessionals was roughly equally common, but more of D's schools report some teacher participation in selecting these persons.

District Office Involvement In a number of items, the extent of district-office involvement in a decision was asked. Without exception, D's schools reported less. When a principal chooses one of the suggested "involvement" categories ("approval required", "little involvement", "no involvement") he, of course, measures in a subjective way a magnitude impossible to make precise. But one sees quite distinctly that D principals perceived less involvement than C principals.

C. Further Interview Evidence

In addition to the general remarks, quoted above, about the burdens of decentralization, the D interviews, summarized in IV C, illustrate, a number of times, specific local curriculum initiatives, and the independent time-consuming way they were typically pursued. One gets an impression that close staff-principal partnership was normal in these initiatives. (See the Section entitled "Sharing the Local Expertise Burden"). For the initiatives reported in the C interviews, on the other hand, substantial effort went into a school-center dialogue. A curriculum change seems at least as likely to be a response to central guidance and suggestion, as to be a purely local initiative.

The Curriculum Council in C tries, as we have seen, to give to a school which proposes a significant curricular change the views of the district office and of other schools as to the promise and the problems of the change. Interview remarks suggest that if a principal in either district views a curriculum council or other such body solely in this light--as a forum for exchanging views and experiences and getting the opinions of central curricular specialists--then he is likely to consider it useful, that is, worth some of his time and effort. Indeed, one of the D principals (School 3) regretted the loss of some "good district office curricular people" who were available, and had, in fact, to be consulted in the days before decentralization. But in fact, C's Council also serves as an obstacle to change, since its approval is required. A principal in D,

given others' views of a proposed change, is still free to accept or reject them, and to make the change even though others are skeptical. A C principal is not. The C interviews, and the Curriculum Council sketch in III above, illustrate sharply that a school must "sell" other people on many sorts of changes before they can take place.

The budgeting diffences between C and D emerge clearly in the interviews. D's freedom to allocate is, in fact, exploited, and the D principals work hard at choosing an allocation. The elaborate school-center dialogue in D--with principals taking part in 16 events of the official budgeting calendar as compared to one event in C--surely reflects the larger budgeting effort of D principals. The effort comprises local observing (what various expenditures have achieved in the past, and what they are likely to achieve next year); local action-choosing (bringing these observations to bear on the choice between many possible allocations); and some reporting.

C principals express the wish for some of D's allocation freedom, and they sometimes approximate it in a small way by bilateral trading, and by occasional overruns. This suggests that the incentive to devote effort to budget allocation is there, though possibly latent, in principals of any type of district.

With respect to school-parent communication, the interview differences are fuzzier. But there are several striking anecdotes in which C parents were distressed at the lack of school autonomy. No such incidents were reported in the D interviews. One cannot suggest,

from the interviews alone, that D principals work harder at school-parent communication. Still, it may be that a given effort devoted to parents is perceived by principals as more fruitful in D, because it is easier for the autonomous D school to respond to parents with actual changes.

Personnel (teacher-hiring) decisions are sharply constrained in both districts by the reality of a declining enrollment, district agreements with teacher organizations, and state teacher-pupil ratio requirements. Still, there are hints that when teacher or teaching-aide vacancies arise, more local effort is likely to be spent on choosing among candidates in D than in C.

VI. CONCLUSION: THE "BEHAVIORAL" DECENTRALIZATION CONJECTURE AND ITS FURTHER STUDY IN C, D, AND OTHER DISTRICTS

The evidence just summarized supports our claim that D has more effort devoted to local expertise, more freedom in action-choosing, and less effort devoted to coordination than C. To argue for such a general characterization of the C-D difference, without explicitly modeling the designs used in C and D, has been challenging enough. It is a much trickier matter to return now to our "Behavioral" Decentralization Conjecture and to see how further study of C versus D, and of other districts, might eventually support or refute it.

Certainly C and D can be viewed as different in design. If inclined to, one could elaborate our primitive formal definition of design, with its single exchange of messages between center and local persons, so that it comes a bit closer to the actual complex year-long

series of school-center interchanges, budget-allocation actions, curricular actions, personnel actions, parent-communication actions, and schools' repeated observations of all aspects of their local environments. Thus redefined, a pair of designs which reasonably model the schemes C and D have chosen, would surely reveal that a local person (a school) has more choosable actions in D's design than in C's design, for every possible combination of local observation and message-from-the-center. In such a pair of designs, the local expertise effort of a school in D would be substantially higher than that of a school in C, because the required levels of detail in both local observing and local action-choosing are higher. But C's chosen design would require more coordination effort in the organization as a whole, because the center provides more detailed instructions, and perhaps engages in more detailed observation of its environment, and because C schools make more detailed reports to the center about some--but not all-- major aspects of their local environments. Specifically, C's reports include proposals (made to the Curriculum Council) for curricular change, including summaries of supporting local observations. C's more detailed "instructions" include the decisions of the Curriculum Council, and the announcing of individual school budgets. With respect to budgeting, the reporting task may, in fact, be more detailed in D than in C, in view of D's elaborate school-center dialogue. It seems likely, however, that this particular reporting task is not an arduous one, since a school's reports in the budgeting dialogue merely mirror the observing and

action-choosing efforts it makes in narrowing down its possible budget allocations to one surviving choice. D's greater reporting detail in budget matters seems likely to be far outweighed, for reasonable ways of measuring reporting effort, by C's greater level of reporting detail in curriculum matters.

On balance it seems a good bet that, if it were possible convincingly to model the two districts' year-long action-generating schemes for their elementary schools as two chosen designs, then D's design would appear, in our terminology, (1) freer than D's and (2) devoting more of the total administrative effort to local expertise, and less to coordination. Would it also turn out that the two designs require roughly the same total effort?

"Total effort" means the total administrative man-hours--man-hours of principals' and district office staff time--required for activities other than routine, organizationally neutral activities, which occur both at the school-site and at the district office. (These total hours might be weighted by their price). Routine activities are not part of a chosen design. We have seen in III that total administrative man-hours are close (in total dollar cost, at least) for the two districts. The difficulty is that the true total of non-routine man-hours used for the chosen design may be higher in D than in C, because local routine tasks are less intensively performed, or because extra local hours are volunteered in D, and should be counted as part of D's total. After all, D's extra local effort, to which the evidence so compellingly points, must come from somewhere. It may be that a more useful view of total effort includes, in fact, some hours of teachers' time, for in a number of schools in both

C and D, they certainly appear to be co-choosers (together with the principal) of some of the actions, and co-observers of some of the local information which the design requires.

The full Behavioral Conjecture deals with organizational performance and with reward structure. There are surely some perceived rewards in D impelling principals toward the extra efforts they all report, perhaps just some image of the "good" decentralized principal, whose fulfillment either is its own reward or can be expected to trigger subsequent advancement. As for a performance indicator which expresses a district's preferences, it may well give considerable weight to dimensions in which D ranks ahead of C. One such dimension may be principals' satisfaction with their own effectiveness; another may be curricular variety; a third may be parents' satisfaction with their influence on their school's actions. One would expect such dimensions to be favored, on the whole, when more effort is directed to local observation and to action-choosing, and less to coordination. On the other hand, C might well outrank D with regard to a performance indicator which gives high weight to curricular uniformity--which, for example, makes it much more important that no school drops below some minimal reading score than that the average over all schools be high.

If test scores and other standardized school performance measures do turn out to be higher for a freer, high-local-expertise, low-coordination design like D's, then that may well be because the advantages of greater pooling of schools' proposals and experiences, and greater availability of district office curriculum experts in a high-coordination design like C's,

are outweighed by the advantages of a more intensive search for curricular decisions "tailor-made" to local environments in a design like D's.

But these are speculations. To settle the measurement of non-routine effort in C and D, to identify actual reward structures, to find district performance indicators agreed to by the two districts' ultimate managers (their Boards), and, indeed, to model the two schemes convincingly as designs--all this would require wide-ranging and intensive interviewing and reinterviewing, questionnaire surveying and resurveying, and possibly around-the-clock study of both schools and center in the ethnographic style. The present exploratory study had nowhere near the resources that it would take.

Even if C and D were studied with conclusive intensity, it is not clear that either C's chosen design or D's chosen design is a good solution to the organizational puzzle facing districts of their size and composition. It may be, for example, that D does not sufficiently exploit the discoveries generated by its high local expertise. D might benefit fr[illegible] some version of a curriculum council as a forum for the compulsory exchange of ideas, so that the district becomes more like a massive laboratory, wherein many freely chosen individual experiments are widely reported, and the successful ones voluntarily imitated. A design which blends elements of both designs might be better than either.

On the other hand, D's design might be viewed as rather timid "decentralization", and C's as timid "centralization", so that a designer contemplating one extreme or the other might regard neither as a very interesting model. A district could go much further than D in transferring district

office man-hours to local schools, to help them with tasks of local expertise, so that still higher detail is achieved in local observing, and in the action-choosing which is based upon it.*

A district could go much further than C in restricting local action, and devoting effort instead to more elaborate centralization. It could require each principal to be a detailed reporter--which would require him also to be a detailed local observer, since reports are based on observations. It could make the center into a more detailed observer of its own environment: board preferences; the general state of the educational art; unexplored financing opportunities; attributes of the whole district's

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*Interviews in D claimed repeatedly that "decentralization" has not in practice gone as far as the original reform intended, because of declining enrollments and budgetary stringencies not expected at the time of the reform. Whether the case for "decentralization" weakens in "tight" times is a complex and subtle question, never clearly dealt with in any literature. (The claim that the case does weaken appeared, notoriously, in quite another context: It was held by some that a wartime economy, with its continuing "state of emergency", in which certain resource uses have extremely high priorities, has to be run in a highly "centralized" manner. Policy-makers accepted the view, but the theoretical argument for it, and indeed the claimed proposition itself, have always been very murky. See ([6]). On the one hand, those responsible for a school district want, in stringent times, to be able quickly to freeze budgets and to veto risky experiments when a deficit looms, and decentralization is thought to threaten such speed. But, on the other hand, if decentralization is believed to mean better management of fixed resources, then, when there is no slack, is not better management, and hence decentralization, more crucial than ever?

teachers, students, and parents. It could make the center use the detailed local reports and the detailed central observations to generate highly detailed instructions, which much more sharply constrain each school's choices than C's present design. The principals would be turned into detailed, but quite passive observer-reporters, who would not need to worry at all about what curricular, budgetary, personnel, and parent-communication actions to choose, since the center has done the worrying for them.

Incomplete as our two-district comparison may be, it appears still to have made a good case for a new view of the centralization-decentralization issue, as confronts both school-district policy-makers and future researchers. For the policy-maker--the designer or "reformer" of school districts--the question ought not to be more local freedom or less local freedom. If there is to be more local freedom, then it has to be accompanied by more resources effectively available for tasks of local expertise, or else there is no reason to expect significantly changed actions and changed performance. The policy-maker has to decide whether these resources are, in effect, to be stolen from the performance of local routine tasks, hidden in volunteer overtime by overworked and ultimately resisting school principals, or in fact made clearly available--perhaps by moving district-office man-hours to school sites.

An imaginative designer could, in fact, abandon the constraint under which all districts, whether "decentralized" or not, currently operate: that a school's total funds are to be based on school size, according to a uniformly applied formula. One could recognize instead that different

schools contribute differently to the district's overall goals. Some are very productive in transforming their resources into fulfillment of these goals, and others are not. What one wants is an efficient allocation of the district's funds. When this is achieved, and only then, taking funds from one school and moving them to another would not improve the district's overall performance.

A decentralized scheme of the sort long concocted, in rich and subtle variety, by economic theorists could be fashioned. Such a scheme generates next year's allocation of district funds to schools. It is a dialogue between schools and center, conducted each year in a series of steps. At each step each school is given a proposed next year's sum, and announces what it could achieve with slightly less and with slightly more. The center inspects these announcements and readjusts the sums, giving a bit more to schools where the improvement (as judged according to the district's goals) would be great, and taking away from those where damage would be small. Then new school announcements are made for the new sums, and so on. At the last step, good sums have been found, and they can then be allocated freely by the schools. One difficulty is, of course, to insure that schools "tell the truth" at each step, but cleverly chosen reward structures, and the incorporation of last year's actual school performance records into the center's sum-adjustment rule, may induce them to do so.

Many realities have, of course, so far blocked any approximation to the economists' dream. Chiefly, a uniform school-size formula for choosing sums seems to be required by law. And the thought of trying, as the scheme requires, to capture a district's goals in a one-dimensional payoff

function, defined on magnitudes like school test scores, horrifies many administrators. But laws can be modified, and district boards can be asked to be more explicit about what they really want. The verdict is certainly not in on such fanciful decentralized designs, because they have never been tried.*

The researcher who studies what happens, rather than what could happen, will doubtless be able, in the future, to look at many pairs of districts like the pair explored here. If he wants to see whether "decentralization" as in fact practiced, is good, then the Behavioral Conjecture usefully sharpens the question, as compared to the traditional murky conjecture, according to which "greater freedom" improves local morale and makes local efforts more fruitful. Measurable explanatory variables which ambitious research could seek to relate to measures of district performance, might now include school-site and district office hours devoted to non-routine tasks, as well as indicators of freedom (i.e., the set of choosable actions in various areas, the local effort required to enlarge the set).

Both policy-maker and researcher would, in this new view, become vividly aware that an effective move toward more freedom increases some

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*In fact the Budgeting Handbook of D does hint vaguely at a future design, which might have something in common with the iterative sum-revising scheme: "A process for weighting the school allocation formula to accomodate special problems needs to be developed." In view of D's commitment to decentralization, such a "process" would surely be a school-center dialogue, requiring a number of steps.

costs and diminishes others, that it channels some new streams of information into the choosing of actions, but dries up other. There are not two simple poles (like "decentralization" and "centralization") of good and bad organization. There is a spectrum of complex and subtle options which we now only begin, quite dimly, to perceive.

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